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## NOTICE OF ALLOWANCE AND FEE(S) DUE

22850

7590

07/15/2008

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

PEACE, RHONDA S

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 07/15/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,891	07/16/2003	Masataka Ito	273855U/S90	1485

TITLE OF INVENTION: PROTECTIVE SEALING OF OPTOELECTRONIC MODULES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$300	\$0	\$1020	10/15/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** **Mail** **Mail Stop ISSUE FEE**  
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**P.O. Box 1450**  
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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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**OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.**  
**1940 DUKE STREET**  
**ALEXANDRIA, VA 22314**

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,891	07/16/2003	Masataka Ito	273855U/S90	1485

**TITLE OF INVENTION: PROTECTIVE SEALING OF OPTOELECTRONIC MODULES**

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$300	\$0	\$1020	10/15/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
PEACE, RHONDA S	2874	385-089000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date \_\_\_\_\_

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 554 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 554 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

# Notice of Allowability

## Application No.

10/621,891

## Examiner

Rhonda S. Peace

## Applicant(s)

ITO ET AL.

## Art Unit

2874

### - The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment files 5/14/2008.
2. ☒ The allowed claim(s) is/are 1-4,6,7,9-11,15-19,21-30,32-40,42-49,51,52 and 54-59.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

/Rhonda S. Peace/, Examiner, Art Unit 2874  
/Michelle R. Connelly-Cushwa/, Primary Examiner, AU 2874

## **DETAILED ACTION**

### ***Allowable Subject Matter***

Claims 1-4, 6, 7, 9-11, 15-19, 21-30, 32-40, 42-49, 51, 52, and 54-59 are allowed.

The following is an examiner's statement of reasons for allowance:

Pertaining to claims 1-4, 6, 7, and 9, the applicable prior art does not disclose or reasonably suggest an optoelectronic module comprising an optical fiber block, a plurality of optical fibers having fiber facets terminating on an end face of said block, a submount disposed adjacent to said end face of said block, an edge emitting laser diode array disposed on said submount in optical alignment with said facets of said fibers, a cap disposed on said submount and detachably adjoining said end face of said block such that the cap encloses said diode array and said facets therein, said cap augmenting the contact area between said submount and said block, a resin encapsulating said array in said cap wherein said resin is substantially transparent to light wavelengths passing between said array and said facets, wherein said cap has an injection hole therein for introducing said resin in an initially fluid uncured state into a chamber formed by said cap, said submount, and said end face of said block such that the fluid resin is contained by said cap in said uncured state. The most applicable prior art, considered to be Auracher et al (US 6,367,988), discloses an optoelectronic module having a fiber block adjoined to a submount with an edge emitting laser and cap as seen in Figure 1. However, Auracher et al does not disclose the cap as being detachably adjoining to said submount, and in contrast teaches the cap is soldered to

both the submount and the optical fiber block to attain a hermetic seal. Moreover, Auracher et al does not disclose or reasonably suggest a resin encapsulating said edge emitting laser, or an injection hole for introducing a fluidic uncured transparent resin into the chamber formed by the cap, submount, and fiber block, such that the resin is contained by the cap in an uncured state. Porter et al, addressed in the previous Office Action mailed 1/25/20078 uses fluid resin introduced through an injection hole to achieve a post-joining optical alignment between an optical fiber end face and an optical detector. However, as Auracher et al, by the use of soldering to achieve the preferred hermetic seal, does not allow post-joining alignment, and therefore the use of resin as taught by Porter et al is non-obvious in view of Auracher et al. For these reasons, the current invention is patentable over the prior art and is now in condition for allowance.

Concerning claims 10, 11, and 15-17, the applicable prior art does not disclose or reasonably suggest, the applicable prior art does not disclose or reasonably suggest an optoelectronic module comprising an optical fiber block, a plurality of optical fibers having fiber facets terminating on an end face of said block, a submount having one of a surface emitting laser diode array and a photodiode array disposed therein, a spacer interposed between said submount and said end face and configured to provide connective coupling between said submount and said end face such that the spacer encloses said diode array and said fiber facets when the submount is coupled to the end face by way of the spacer, and a resin encapsulating said diode array in said spacer, said resin being substantially transparent to light transmission between said diode array and fiber facets, wherein said spacer is bonded to said submount and said

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end face for sealing said diode array and said fiber facets, and said spacer has a resin injection port therein for admitting a sealing resin into a chamber formed by said spacer between said submount and said end face. The most applicable prior art, considered to be Morris et al (US 2004/0057678), discloses an optoelectronic module having a submount with a surface-emitting laser or diode receiver thereon, with an optical fiber block optically coupled to said emitter or receiver, and a spacer located between said submount and said fiber block such that said spacer provides connective coupling therebetween said block and said submount. However, Morris et al does not disclose or reasonably suggest the use of a transparent resin to encapsulate said laser diode, wherein said spacer has a resin injection hole or opening to introduce liquid resin into a chamber defined by said spacer, submount, and block, such that said diode array is encapsulated. Porter et al, addressed in the previous Office Action mailed 1/25/20078 uses fluid resin introduced through an injection hole to achieve a post-joining optical alignment between an optical fiber end face and an optical detector via the use of an intermediate chamber-forming device. However, Morris et al prevents post-joining alignment adjustments, as the module of Morris et al is aligned with pins, and therefore the use of resin as taught by Porter et al is non-obvious in view of Morris et al. For these reasons, the current invention is patentable over the prior art and is now in condition for allowance.

Addressing claims 18, 19, and 21-24, the applicable prior art does not disclose or reasonably suggest a method for sealing an optoelectronic assembly in a transmitter or receiver module comprising the following: 1) providing an optical fiber block supporting

a plurality of optical fibers each having a fiber facet terminating on an end face of said block to define a fiber facet array, 2) providing a submount having a top surface and a side surface, 3) bonding a laser diode array chip having a laser diode array to said top surface of said submount, 4) providing a cap configured to be disposed on said submount and adjoined to said end face of said optical fiber block such that said cap encloses said laser diode array and said fiber facet array therein, wherein said cap augments a contact area between said submount and said fiber block, 5) affixing said cap to said submount, 6) optically aligning said diode array with said fiber facet array, 7) bonding said submount to said optical fiber block, wherein said cap cooperates with said fiber block to define a fluid containment enclosure encompassing said laser diode array chip, and 8) applying a liquid resin through a hole in said fluid containment enclosure to encapsulate said laser diode array chip. The most applicable prior art, considered to be. The most applicable prior art, considered to be Auracher et al (US 6,367,988), discloses an optoelectronic module having a fiber block adjoined to a submount with an edge emitting laser and cap as seen in Figure 1. Auracher et al teaches the cap is soldered to both the submount and the optical fiber block to attain a hermetic seal. Moreover, Auracher et al does not disclose or reasonably suggest a resin encapsulating said edge emitting laser, or an injection hole for introducing a fluidic uncured transparent resin into the chamber formed by the cap, submount, and fiber block. Porter et al, addressed in the previous Office Action mailed 1/25/20078 uses fluid resin introduced through an injection hole to achieve a post-joining optical alignment between an optical fiber end face and an optical detector. However, as



Auracher et al, by the use of soldering to achieve the preferred hermetic seal, does not allow post-joining alignment, and therefore the use of resin as taught by Porter et al is non-obvious in view of Auracher et al. For these reasons, the current invention is patentable over the prior art and is now in condition for allowance.

Pertaining to claims 25-30, 32-40, 42, and 43, the applicable prior art does not disclose or reasonably suggest a method of sealing an optoelectronic assembly in a transmitter or receiver module comprising the following steps: 1) providing an optical fiber block supporting a plurality of optical fibers each having a fiber facet terminating on an end face of said block to define a fiber facet array, 2) providing a submount, 3) bonding a diode array chip having a laser diode array to said submount, 4) providing a containment dam between said submount and said end face such that said dam encloses said diode array and said fiber facets and provides connective coupling between the submount and end face or augments a contact area between the submount and end face, 5) affixing said dam to said submount for defining a fluid containment enclosure encompassing said diode array chip, 6) assembling said submount, said dam, and said fiber block with said diode array chip in optical alignment with said fiber facet array, 7) applying a liquid resin to encapsulate said diode array chip, wherein said dam cooperates with said optical fiber block to make a closed chamber containing said diode array and said fiber facet array, said closed chamber including a hole or opening for admitting said liquid resin into said closed chamber. The most applicable prior art, considered to be The most applicable prior art, considered to be. The most applicable prior art, considered to be Auracher et al (US 6,367,988),

discloses an optoelectronic module having a fiber block adjoined to a submount with an edge emitting laser and cap as seen in Figure 1. Auracher et al teaches the cap is soldered to both the submount and the optical fiber block to attain a hermetic seal. Moreover, Auracher et al does not disclose or reasonably suggest a resin encapsulating said edge emitting laser, or an injection hole for introducing a fluidic resin into the chamber formed by the cap, submount, and fiber block. Porter et al, addressed in the previous Office Action mailed 1/25/20078 uses fluid resin introduced through an injection hole to achieve a post-joining optical alignment between an optical fiber end face and an optical detector. However, as Auracher et al, by the use of soldering to achieve the preferred hermetic seal, does not allow post-joining alignment, and therefore the use of resin as taught by Porter et al is non-obvious in view of Auracher et al. For these reasons, the current invention is patentable over the prior art and is now in condition for allowance.

With regards to claims 44-49, 51, and 52, the applicable prior art does not disclose or reasonably suggest an optoelectronic data communication module comprising a housing module with electronic transmitter or receiver circuits in said housing module, an optical fiber block having a plurality of optical fibers having facets terminating on an end face of said block, a submount having one of a light emitter diode array and a light detector diode array mounted thereon in optical alignment with said facets and operatively connected to said circuits, and a chamber forming device configured to form a chamber with said submount and said end face of said block such that said chamber forming device encloses said diode array and said facets in said

chamber and provides connective coupling between said submount and the end face or augments a contact area between the submount and said end face, wherein said chamber forming device also defines a fluid containment dam about said array and the chamber includes a hole or opening therein for admitting a liquid epoxy resin into the fluid containment dam, and wherein said array is encapsulated in said epoxy resin contained in said dam. The most applicable prior art, considered to be Morris et al (US 2004/0057678), discloses an optoelectronic module having a submount with a surface-emitting laser or diode receiver thereon, with an optical fiber block optically coupled to said emitter or receiver, and a spacer located between said submount and said fiber block such that said spacer provides connective coupling therebetween said block and said submount. However, Morris et al does not disclose or reasonably suggest the use of a transparent resin to encapsulate said laser diode, wherein said spacer has a resin injection hole or opening to introduce liquid resin into a chamber defined by said spacer, submount, and block, such that said diode array is encapsulated. Porter et al, addressed in the previous Office Action mailed 1/25/20078 uses fluid resin introduced through an injection hole to achieve a post-joining optical alignment between an optical fiber end face and an optical detector via the use of an intermediate chamber-forming device. However, Morris et al prevents post-joining alignment adjustments, as the module of Morris et al is aligned with pins, and therefore the use of resin as taught by Porter et al is non-obvious in view of Morris et al. For these reasons, the current invention is patentable over the prior art and is now in condition for allowance.

Concerning claims 54-59, the applicable prior art does not disclose or reasonably suggest a method of making an optoelectronic assembly in a transmitter or receiver module comprising the following: 1) providing an optical fiber block supporting a plurality of optical fibers each having a fiber facet terminating on an end face of said block to define a fiber facet array, 2) providing a submount, 3) providing a containment dam configured to be disposed on said submount and adjoin said end face of said block such that said dam encloses a diode array and said fiber facets therein, said dam having a bottom surface and at least one side surface that augments a contact area between said submount and said end face, 4) bonding a diode array chip to said submount, 5) bonding the bottom surface of said containment dam to said submount, 6) bonding one or both of said submount and said one or more side surfaces of said optical fiber block with said diode array chip in optical alignment with said fiber facet array, wherein said containment dam cooperates with said end face to define a fluid containment enclosure encompassing said diode array chip, and 7) applying a liquid sealing resin through a hole or opening in said fluid containment enclosure to said diode array chip to thereby encapsulate said chip in resin. The most applicable prior art, considered to be. The most applicable prior art, considered to be Auracher et al (US 6,367,988), discloses an optoelectronic module having a fiber block adjoined to a submount with an edge emitting laser and cap as seen in Figure 1. Auracher et al teaches the cap is soldered to both the submount and the optical fiber block to attain a hermetic seal. Moreover, Auracher et al does not disclose or reasonably suggest a resin encapsulating said edge emitting laser, or an injection hole for introducing a fluidic uncured transparent resin into

the chamber formed by the cap, submount, and fiber block. Porter et al, addressed in the previous Office Action mailed 1/25/20078 uses fluid resin introduced through an injection hole to achieve a post-joining optical alignment between an optical fiber end face and an optical detector. However, as Auracher et al, by the use of soldering to achieve the preferred hermetic seal, does not allow post-joining alignment, and therefore the use of resin as taught by Porter et al is non-obvious in view of Auracher et al. For these reasons, the current invention is patentable over the prior art and is now in condition for allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hammond et al (US 2002/0150357 A1) and Mazotti et al (US 2004/0109649 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/  
Examiner, Art Unit 2874

/Michelle R. Connelly-Cushwa/  
Primary Examiner, Art Unit 2874